



## Omega-3: A link between global climate change and human health

---

**Author(s):** Kang JX  
**Year:** 2011  
**Journal:** Biotechnology Advances. 29 (4): 388-390

---

### Abstract:

In recent years, global climate change has been shown to detrimentally affect many biological and environmental factors, including those of marine ecosystems. In particular, global climate change has been linked to an increase in atmospheric carbon dioxide, UV irradiation, and ocean temperatures, resulting in decreased marine phytoplankton growth and reduced synthesis of omega-3 polyunsaturated fatty acids (PUFAs). Marine phytoplankton are the primary producers of omega-3 PUFAs, which are essential nutrients for normal human growth and development and have many beneficial effects on human health. Thus, these detrimental effects of climate change on the oceans may reduce the availability of omega-3 PUFAs in our diets, exacerbating the modern deficiency of omega-3 PUFAs and imbalance of the tissue omega-6/omega-3 PUFA ratio, which have been associated with an increased risk for cardiovascular disease, cancer, diabetes, and neurodegenerative disease. This article provides new insight into the relationship between global climate change and human health by identifying omega-3 PUFA availability as a potentially important link, and proposes a biotechnological strategy for addressing the potential shortage of omega-3 PUFAs in human diets resulting from global climate change.

**Source:** <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3090543>

### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes

#### Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal

#### Geographic Location:

resource focuses on specific location

Global or Unspecified

#### Health Impact:

specification of health effect or disease related to climate change exposure

# Climate Change and Human Health Literature Portal

Malnutrition/Undernutrition, Other Health Impact

**Other Health Impact:** Deficiency of omega-3 PUFA

**Mitigation/Adaptation:** ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

**Resource Type:** ☒

format or standard characteristic of resource

Review

**Timescale:** ☒

time period studied

Time Scale Unspecified

**Vulnerability/Impact Assessment:** ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content